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EXAMINER	
ZEC, FILIP	

ART UNIT	PAPER NUMBER
3744	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/529,154	UMENO, YOSHIHISA	
	Examiner	Art Unit	
	Filip Zec	3744	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 January 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3 and 5-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3 and 5-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 1/25/2010 have been fully considered but they are not persuasive.

In reference to the applicant's arguments regarding the rejection of claim 1, the limitation "*so as to allow cold air to be accumulated in the cooler*" represents an intended use statement. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the limitation of the claim. In this case, the cooler (11, FIG. 2) circulates the air accumulated in the pocket provided between the partition (C, FIG. A) and the side-wall (G, FIG. A) which stretches from the top of the structure to the area below the cooler (11, FIG. 2). The partition M (as designated by the applicant) is encompassed in this pocket and does not prevent the accumulation of the air in said pocket.

Further, the applicant is incorrectly arguing that because "*the fan 20 in Figure A is disposed in an aperture I formed in the partition M (as designated by the applicant), Kim cannot disclose or suggest that the partition in front of the fan has an aperture formed in a flat sheet portion, and that an open space is formed between the fan and the flat sheet portion in which the aperture is formed*". The aperture I is not referenced as the claimed aperture, rather it is the aperture D which is referenced, allowing for the space between said aperture D and the fan (20, FIG. 2).

Additionally, the applicant is arguing that the structure of Kim "*does not disclose or suggest that a rotation of the fan generates a sucked flow of cold air sucked from the cooling chamber to the cooler through the aperture, as recited in claim 1 and that Kim also cannot disclose or suggest that the discharged flow and the sucked flow directed from the cooling chamber to the cooler collide with each other in the aperture, as recited in claim 1*". However, the limitation "*wherein rotation of the fan generates a discharged flow of cold air discharged from the cooler to the cooling chamber through the aperture and a sucked flow of cold air sucked from the cooling chamber to the cooler through the aperture, and the discharged flow and the sucked flow directed from the cooling chamber to the cooler collide with each other in the aperture.*" represents an intended use statement. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In this case, the collision between the air flow to and from the aperture D is inherent since the air flow rising from the bottom of the chamber F is met with the air flow coming from the cooler (11, FIG. 2) via fan (20, FIG. 2) through the aperture D.

Rejections remain as stated.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-3 and 5, 6, 8 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 5,987,904 to Kim et al. (Kim).

In reference to claim 1, Kim teaches a cooling device (FIG. 2) comprising a cooler (11, FIG. 2) provided on at least one side-wall side (G, FIG. A, as annotated by the Examiner) formed with a thermal insulating box (inherent in a freezer construction as shown in Kim, see FIG. 2); a cooling chamber (F, FIG. A) in front of the cooler (11, FIG. 2); and a fan (20, FIG. 2) that allows air in the cooling chamber to flow, wherein the cooler and the cooling chamber are partitioned by a partition (C, FIG. A) so as to allow cold air to be accumulated in the cooler, the fan (20, FIG. 2) is disposed on a side of the cooler (11, FIG. 2) relative to the partition (C, FIG. A), the partition in front of the fan (20, FIG. 2) has an aperture (D, FIG. A) formed in a flat sheet portion (above and below partition C, FIG. A), an open space is formed between the fan and the flat sheet portion in which the aperture is formed (see FIG. 2), cold air accumulated in a space inside the partition, and hot air in the cooling chamber are exchanged by the fan (20, FIG. 2) through the aperture (D, FIG. A), wherein the rotation of the fan generates a discharged flow of cold air discharged from the cooler to the cooling chamber through the aperture and a sucked flow of cold air sucked from the cooling chamber to the cooler through the aperture, and the discharged flow and the sucked flow directed from the cooling chamber to the cooler collide with each other in a portion in which the aperture is provided (inherent in the structure as described in Kim, see FIG. 2).

In reference to claim 2, Kim discloses the cooling device as explained in the rejection of claim 1, and Kim also teaches that dimensions of the aperture (D, FIG. A) are larger than a diameter of the fan (20, FIG. 2).

In reference to claim 3, Kim discloses the cooling device as explained in the rejection of claim 2, and Kim also teaches that when viewing the fan (20, FIG. 2) in a direction of a rotation shaft of the fan, the fan is disposed in the aperture (D, FIG. A) and there is an open space outside the fan (in front and around of fan 20, FIG. 2).

In reference to claim 5, Kim discloses the cooling device as explained in the rejection of claim 1, and Kim also teaches that the discharged airflow and the sucked flow collide with each other, thus suppressing the flow speed of the cold air (inherent in the structure as described in Kim, see FIG. 2 and FIG. A).

In reference to claim 6, Kim discloses the cooling device as explained in the rejection of claim 1, and Kim also teaches that the fan (20, FIG. 2) is disposed above the cooler (11, FIG. 2).

In reference to claim 8, Kim discloses the cooling device as explained in the rejection of claim 1, and Kim also teaches that a slit (B, FIG. A) is formed in the partition (C, FIG. A) at a portion below the cooler (11, FIG. 2).

In reference to claim 10, Kim discloses the cooling device as explained in the rejection of claim 1, and Kim also teaches that a safety cover (grille H, FIG. A) is disposed over the fan aperture (D, FIG. A).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim in view of U.S. Patent 4,420,679 to Howe (Howe).

In reference to claims 7 and 9, Kim discloses the cooling device as explained in the rejection of claim 1, but does not explicitly teach that a fan application with an area of the aperture S and a diameter of the fan R satisfies a plurality of combinations, including the following relationship

$$1.5 \times \pi(R/2)^2 \leq S \leq 2 \times \pi(R/2)^2$$

Howe teaches (FIG. 3) that the aperture diameter is approximately twice the length of the fan sweep diameter, and therefore, meets the limitation criteria in order to advantageously create a more subtle temperature gradient throughout the chamber by way of enhanced mixing, and thereby, providing a more predictable environment within the enclosure for more predictable results

Therefore, it would thus have been obvious to one of ordinary skill in the art at the time of the invention was made to additionally modify Lazar by proportioning the fan to aperture ratio in accordance with

$$1.5 \times \pi(R/2)^2 \leq S \leq 2 \times \pi(R/2)^2$$

as taught by Howe in order to advantageously create a more subtle temperature gradient throughout the chamber by way of enhanced mixing, and thereby, providing a more predictable environment within the enclosure for more predictable results. It would have been further obvious to one of ordinary skill in the art at the time of the invention was made to modify the apparatus of Lazar with an oversized fan aperture with a plurality of proportions with said range

in order to advantageously create a customized flow pattern, and thereby, further satisfying designers criteria to afford better results.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Filip Zec whose telephone number is 571-270-5846. The examiner can normally be reached on Monday-Friday, from 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisors, Frantz Jules or Cheryl Tyler can be reached on 571-272-6681 or 571-272-4834, respectively. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Cheryl J. Tyler/
Supervisory Patent Examiner, Art Unit 3744

/F. Z./
Examiner, Art Unit 3744

5/4/2010